CERTIFIED MAIL 7018 3090 0001 9999 1778



January 27, 2021

Air and Radiation Division
U. S. Environmental Protection Agency, Region V
77 West Jackson Boulevard,
Chicago, IL 60604

**Re: Submittal of U. S. Steel – Minntac and Keetac Compliance Reports per the Requirements of 40 CFR Part 52.1235(e)(5) through (7) – Taconite Regional Haze FIP**

U. S. Steel – Keetac (Keetac)

Keetac utilizes Ametek Model 920 analyzers to measure NOx and $SO_2$ (Serial Number AE-920-10086-1).

Keetac submits quarterly excess emission reports to the Minnesota Pollution Control Agency. Therefore, to fulfill the requirements of the excess emissions and monitoring system performance reports, a copy of the quarterly excess emissions report for the 4th quarter is included in this submittal. Where EPA's requirements per the regulation differ from Minnesota's requirements, this information is also being included.

Any periods of startup and shut down are reported in Section 5 of the DRF-1 Form included in this submittal. There were no deviations during this reporting period.

The emission limitation for SO2 is 225 lbs/hr – 30 day rolling average. There were no deviations associated with the emission limit.

The emission limitation for NOx became effective on September 8, 2019 and is 1.5 lbs/MMBtu based on a 30-day rolling average. However, for any 30 or more consecutive days when only natural gas is used, a limit of 1.2 lbs/MMBtu applies. Refer to attachment 1.

The last CEMS CGA was conducted on December 12, 2020 and was previously provided. The last CEMS RATA was conducted on March 24, 2020 and was submitted separately on April 28, 2020.

U. S. Steel – Minntac (Minntac)

Minntac utilizes Ametek Model 920 analyzers to measure NOx and $SO_2$. The table below outlines the serial numbers for each of the units:

| | |
|---|---|
| Line 3 | AE-920-10086-1 |
| Line 4 | AE-920-10086-2 |
| Line 5 | AE-920-10086-3 |
| Line 6 | ZA-920-10336-1 |

| | |
|---|---|
| Line 7 | ZA-920-10336-2 |

Minntac submits quarterly excess emission reports to the Minnesota Pollution Control Agency. Therefore, to fulfill the requirements of the excess emissions and monitoring system performance reports, a copy of the quarterly excess emissions report for the 4th quarter is included in this submittal. Where EPA's requirements per the regulation differ from Minnesota's requirements, this information is also being included.

Any periods of startup and shut down are reported in Section 5 of the DRF-1 Form included in this submittal. There were no deviations during this reporting period.

The emission limitation for $SO_2$ is a 30-day rolling average aggregate limit for indurating lines 3-7 of 498 lbs/hr when all lines are producing flux pellets, 630 lbs/hr when producing acid pellets or using the equation in 40 CFR 52.1235(b)(2)(iii) when the 30 day period includes both acid and flux pellet production. There were no deviations associated with the emission limit.

The emission limitation for NOx on Lines 4, 5, 6 and Line 7 is 1.5 lbs/MMBtu based on a 30-day rolling average. However, for any 30 or more consecutive days when only natural gas is used, a limit of 1.2 lbs/MMBtu applies. There were no deviations associated with the emission limit for Lines 4, 5, 6 and Line 7.

The latest CEMS RATA was conducted on Lines 3-5 on May 20-22, 2020 and for Lines 6 and 7 on August 19-20, 2020. The first report was submitted on July 8, 2020. The subsequent report was submitted on October 6, 2020. The last CGAs were performed on November 3rd and 4th of 2020.

If you should require any additional information, please contact me at scampbell@uss.com or 218-778-8684.

Sincerely,

Stephani Campbell

Stephani Campbell
Environmental Control

U. S. Steel Corporation
Minnesota Ore Operations
P.O. Box 217
Keewatin, MN 55753

CERTIFIED MAIL 7018 3090 0001 9999 1761

January 27, 2021

Air Quality Compliance Tracking Coordinator
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

Re: U. S. Steel – Keetac Administrative Order by Consent
Quarterly Continuous Monitoring System Deviation Report

Dear Supervisor:

Enclosed with this letter is U. S. Steel – Keetac's (Keetac) Quarterly Continuous Emission Monitoring System Deviation report for the 4th quarter of 2020. The Continuous Emission Monitoring System (CEMS) was certified on Keetac's Waste Gas Stack on November 6th, 2008. The CEMS was installed as a part of Keetac's Administrative Order by Consent with the State of Minnesota effective September 27th, 2007.

***Deviations associated with Emission Limits***

There were no deviation associated with emission limits.

***Deviations associated with Monitor Downtime***

There were fifteen instances of monitor downtime that affected either $NO_x$ or $SO_2$. The individual downtime duration and cause is listed in the monitor downtime section of this report.

***Deviations associated with Monitor Bypass***

Keetac utilizes a grate/kiln system for pelletizing taconite. Although this is an extremely hot process (with temperatures exceed 2500 °F in the kiln), the equipment is designed to withstand the high temperatures and will do so during normal operation. However, the grate is very susceptible to heat damage during upset conditions or if stopped for any reason while it is hot. To prevent equipment damage and heat related safety issues during these situations, large amounts of heat must be released from the grate as soon as possible. For that reason the system was designed

such that when the grate stops or gets overheated, a stack cap is lifted to release heat through an emergency stack. At this time the monitor is bypassed. These situations are the only times the monitor is bypassed. Because they represent upset conditions or process downtime (production loss), the company has a strong vested interest in minimizing both the number and duration of occurrences.

The times listed in the monitor bypass section are when the grate emergency stack cap is open and there is combustion in the kiln. This is the only time when any $NO_x$ and $SO_2$ are emitted. Times when the cap is open but there is no combustion in the kiln are not listed.

If you have any questions concerning these forms, please contact Stephani Campbell at (218) 778-8684.

Sincerely,

Travis Kolari
Plant Manager
U. S. Steel - Minnesota Ore Operations

Enclosure

cc: Steve Palzkill – MPCA
File

Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

# Excess Emissions Reporting Form - DRF-1

## Continuous Monitoring Systems Reporting Form

**Please note: This form has been updated. Please print, complete and remit only the forms. Please see the instructions in the Word version of DRF-1 to ensure proper use and understanding of definitions. DO NOT print and return the instructions.**

Use this form to record and report excess emissions (EE) that are identified by *Continuous Monitoring Systems*. This includes Continuous Emission Monitoring Systems (CEMS) and Continuous Opacity Monitoring Systems (COMS). DRF-1 is the form you must use to report excess emissions from a stack as recorded by your facility's Continuous Emission Monitoring Systems (CEMS) and Continuous Opacity Monitoring Systems (COMS).

Address hard copy

Compliance Tracking Coordinator, Fourth Floor
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

## 1) General Facility Information

Company name: U. S. Steel - Keetac

AQ file no.: 62B

AQ permit no.: 13700063-005

Report covers Quarter: Fourth

Year: 2020

## 2) CEMS/COMS Data Summary Table

| | | | | Duration of Monitor Downtime | | Duration of Excess Emissions (EE) | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2a) | **2b)** | 2c) | 2d) | 3i) | 2e) | 4l) | 2f) | 4m) | 2g) |
| Monitor ID Number | Monitor ID Pollutant | EU/SV ID Number | Total Operating Time (TOT) (hr) | Total Duration of Monitor Downtime (hr) | **Downtime % Of TOT** | Cumulative Duration of Exempt EE | **Exempt EE % of TOT** | Cumulative Total Duration of All EE | **Total EE % of TOT** |
| Line 2 | NOx | SV 051 | 609.5 | 14 | 2.3% | N/A | N/A | 0 | 0.00% |
| Line 2 | SO2 | SV 051 | 609.5 | 8 | 1.3% | N/A | N/A | 0 | 0.00% |
| | | | | | | | | | |
| | | | | | | | | | |

**3) Duration of Monitor Downtime:** Provide the following information regarding each period of monitor downtime. Make a separate table for each monitor, as needed.

| 3a) Monitor ID Number | 3b) Monitor ID Pollutant or Parameter | 3c) Emission Unit Being Monitored | 3d) Beginning Date and Time of Downtime | 3e) End Date and Time of Downtime | 3f) Duration of Downtime (min) | 3g) Reason for Monitor Downtime (clarifying comments) | 3h) Corrective ActionTaken (clarifying comments) |
|---|---|---|---|---|---|---|---|
| Line 2 | SO2 | SV 051 | 12/11/2020 09:00:00 | 12/11/2020 09:59:00 | 60 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 2 | SO2 | SV 051 | 12/13/2020 04:00:00 | 12/13/2020 05:59:00 | 120 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 2 | SO2 | SV 051 | 12/16/2020 04:00:00 | 12/16/2020 05:59:00 | 120 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 2 | SO2 | SV 051 | 12/20/2020 23:00:00 | 12/20/2020 23:59:00 | 60 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 2 | SO2 | SV 051 | 12/30/2020 20:00:00 | 12/30/2020 20:59:00 | 60 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 2 | SO2 | SV 051 | 12/31/2020 00:00:00 | 12/31/2020 00:59:00 | 60 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 2 | NOx | SV 051 | 12/09/2020 06:00:00 | 12/09/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 2 | NOx | SV 051 | 12/09/2020 07:00:00 | 12/09/2020 10:59:00 | 240 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 2 | NOx | SV 051 | 12/09/2020 11:00:00 | 12/09/2020 11:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 2 | NOx | SV 051 | 12/11/2020 09:00:00 | 12/11/2020 09:59:00 | 60 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 2 | NOx | SV 051 | 12/13/2020 04:00:00 | 12/13/2020 05:59:00 | 120 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 2 | NOx | SV 051 | 12/16/2020 04:00:00 | 12/16/2020 05:59:00 | 120 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 2 | NOx | SV 051 | 12/20/2020 23:00:00 | 12/20/2020 23:59:00 | 60 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 2 | NOx | SV 051 | 12/30/2020 20:00:00 | 12/30/2020 20:59:00 | 60 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 2 | NOx | SV 051 | 12/31/2020 00:00:00 | 12/31/2020 00:59:00 | 60 | Primary Analyzer Malfunction | Performed necessary maintenance |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

**3i) Total duration of downtime:** 22 **hours**

*Opacity time listed in minutes

## 4) Duration of Excess Emissions: Provide the following information regarding each individual excess emission

| 4a) Emission Unit ID Number | 4b) Monitor ID Number | 4c) Pollutant or Parameter Monitored | 4d) Beginning Date and Time of EE | 4e) End Date and Time of EE | 4f) Limit and Averaging Period | 4g) Highest Reading of EE with Units (example: 5 lb/hr, etc) | 4h) Duration of Exempt EE (include these entries as part of 4i) | 4i) Total Duration of All EE | 4j) Cause of EE (clarifying comments) | 4k) Corrective Action Taken (clarifying comments) |
|---|---|---|---|---|---|---|---|---|---|---|
| SV051 | CM001 | NOx | N/A | N/A | N/A | N/A | 0 | 0 | N/A | N/A |
| SV051 | CM005 | SO2 | N/A | N/A | N/A | N/A | 0 | 0 | N/A | N/A |
| | | | | | | | | | | |
| | | | | | | | | | | |

**4l) Cumulative Duration of Exempt Excess Emissions:** 0

**4m) Cumulative Total Duration** 0 Hrs

**5) Monitor Bypasses:** Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were

| 5a) Monitor ID number | 5b) Emission Unit Required to be Monitored | 5c) Pollutant and Limit Required to be Monitored | 5d) Beginning Date and Time of Bypass Period | 5e) End date and time of bypass period | 5f) Duration of monitor bypass (min) | 5g) Was P.C.E. operating during bypass period? | 5h) Duration of allowable monitor bypass (min) | 5i) Reason for monitor bypass (clarifying comments) | 5j) Corrective action taken (clarifying comments) |
|---|---|---|---|---|---|---|---|---|---|
| Line 2 | SV 051 | NOx and SO2 | 12/6/2020 14:30 | 12/6/2020 23:00 | 510 | Yes | 510 | Bypass necessary to protect plant equipment | N/A |
| Line 2 | SV 051 | NOx and SO2 | 12/6/2020 23:00 | 12/7/2020 7:00 | 480 | Yes | 480 | Bypass necessary to protect plant equipment | N/A |
| Line 2 | SV 051 | NOx and SO2 | 12/7/2020 7:00 | 12/7/2020 15:00 | 480 | Yes | 480 | Bypass necessary to protect plant equipment | N/A |
| Line 2 | SV 051 | NOx and SO2 | 12/7/2020 15:00 | 12/7/2020 23:00 | 480 | Yes | 480 | Bypass necessary to protect plant equipment | N/A |
| Line 2 | SV 051 | NOx and SO2 | 12/7/2020 23:00 | 12/8/2020 7:00 | 480 | Yes | 480 | Bypass necessary to protect plant equipment | N/A |
| Line 2 | SV 051 | NOx and SO2 | 12/16/2020 8:00 | 12/16/2020 8:32 | 32 | Yes | 32 | Bypass necessary to protect plant equipment | N/A |
| Line 2 | SV 051 | NOx and SO2 | 12/20/2020 23:30 | 12/21/2020 0:30 | 59 | Yes | 59 | Bypass necessary to protect plant equipment | N/A |
| Line 2 | SV 051 | NOx and SO2 | 12/21/2020 0:30 | 12/21/2020 2:32 | 123 | Yes | 123 | Bypass necessary to protect plant equipment | N/A |
| Line 2 | SV 051 | NOx and SO2 | 12/22/2020 7:02 | 12/22/2020 10:57 | 234 | Yes | 234 | Bypass necessary to protect plant equipment | N/A |
| Line 2 | SV 051 | NOx and SO2 | 12/26/2020 23:04 | 12/26/2020 23:58 | 54 | Yes | 54 | Bypass necessary to protect plant equipment | N/A |
| Line 2 | SV 051 | NOx and SO2 | 12/28/2020 14:02 | 12/28/2020 14:34 | 32 | Yes | 32 | Bypass necessary to protect plant equipment | N/A |
| Line 2 | SV 051 | NOx and SO2 | 12/30/2020 20:34 | 12/30/2020 21:00 | 26 | Yes | 26 | Bypass necessary to protect plant equipment | N/A |
| Line 2 | SV 051 | NOx and SO2 | 12/30/2020 21:00 | 12/30/2020 21:36 | 35 | Yes | 35 | Bypass necessary to protect plant equipment | N/A |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | **5k) Total duration of allowable monitor bypass:** | | | | **50** | **hours** | |

## COMS audits

| Subject item | Operating hours | Monitor ID | Pollutant | Last audit date | Cal error results | Pass/fail | Next test due by: | Comments |
|---|---|---|---|---|---|---|---|---|
| N/A | | | | | | | | |

## Cylinder gas audit's (CGA)

| Emission unit | Operating hours | Monitor ID | Pollutant | Last audit date | Cal error results | Pass/fail | Next test due by: | Comments |
|---|---|---|---|---|---|---|---|---|
| SV051/EU030 | 609.5 | CM001 | NOx | 12/12/2020 | Low 0.7%<br>Mid 0.31% | Pass | 6/30/2021 | RATA 1st Qtr |
| SV051/EU030 | 609.5 | CM005 | SO2 | 12/12/2020 | Low 4.46%<br>Mid 2.32% | Pass | 6/30/2021 | RATA 1st Qtr |
| | | | | | | | | |
| | | | | | | | | |

## Linearity

| Emission unit | Operating hours | Monitor ID | Pollutant | Last audit date | Cal error results | Pass/fail | Next test due by: | Comments |
|---|---|---|---|---|---|---|---|---|
| N/A | | | | | Low<br>Mid<br>High | | | |

## Relative accuracy test audit (RATA)

| Emission unit | Operating hours | Monitor ID | Pollutant | Last audit date | Relative accuracy | Pass/fail | Next test due by: | Comments |
|---|---|---|---|---|---|---|---|---|
| SV051 | 0 | CM001 | NOx | 3/24/2020 | 10.4% | Pass | 3/31/2021 | |
| SV051 | 0 | CM005 | SO2 | 3/24/2020 | 9.8% | Pass | 3/31/2021 | |
| | | | | | | | | |

## 6) CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Signature of Responsible Official

Travis Kolari

Printed Name of Responsible Official

Plant Manager - Minnesota Ore

Title

January 27, 2021

Date

## Summary Table by Monitor Downtime Type
## U. S. Steel - Keetac
## 4th Quarter 2020

**NOx**

| Line | Duration (Hrs) | Description |
|---|---|---|
| Line 2 | 2 | Automatic Calibration |
| | 0 | Data Handling System Malfunction |
| | 0 | Sample Interface Malfunction |
| | 0 | Excess Drift Primary Analyzer |
| | 12 | Primary Analyzer Malfunction |
| | 0 | Preventative Maintenance |

**SO2**

| Line | Duration (Hrs) | Description |
|---|---|---|
| Line 2 | 0 | Automatic Calibration |
| | 0 | Data Handling System Malfunction |
| | 0 | Sample Interface Malfunction |
| | 0 | Excess Drift Primary Analyzer |
| | 8 | Primary Analyzer Malfunction |
| | 0 | Preventative Maintenance |

**Attachment 1 - Duration of Excess Emissions Table**

| Emission Unit ID | Monitor ID | Pollutant | Date of EE | Beginning and end time of EE | Magnitude of the EE | Cause of EE | Corrective or Preventative Actions Taken |
|---|---|---|---|---|---|---|---|
| SV051 | CM001 | NOx | 12/8/20-12/31/20 | 12/8/20-12/31/20 | NOx emissions have not increased at U. S. Steel - Keetac. The applicable limit is significantly lower than Keetac's historic emissions – using good combustion practices. Because the FIP limit is significantly more stringent than the existing state standard, the emissions at Keetac, despite good combustion practices are substantially higher than the existing FIP limit. | The USEPA Federal Implementation Plan for Regional Haze for Keetac which established significantly more stringent limits became effective on September 8, 2019. This limit is currently under judicial review in the U.S. Court of Appeals for the Eighth Circuit in which U. S. Steel has challenged the technological and economical feasibility of the limit. There is also ongoing mediation between U. S. Steel and USEPA to resolve that case and to develop revised NOx limits. | U. S. Steel – Keetac is actively in mediation with USEPA regarding the FIP NOx limits. During this mediation process, U. S. Steel has completed studies regarding Keetac emissions in an effort to reach resolution. USEPA is reviewing these materials. In the meantime, U. S. Steel – Keetac is relying on good combustion practices to minimize emissions while avoiding impacts to safety and pellet quality. |
| SV051 | CM005 | SO2 | N/A | N/A | N/A | N/A | N/A |

U. S. Steel Corporation
Minnesota Ore Operations
P.O. Box 417
Mt. Iron, MN 55768

CERTIFIED MAIL 7018 3090 0001 9999 1754

January 27, 2021

Air Quality Compliance Tracking Coordinator
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

**Re: United States Steel Corporation, Minnesota Ore Operations – Minntac**
**Air Emissions Permit No. 13700005-006**
**Quarterly Continuous Monitoring System Deviation Report**

Dear Supervisor:

Enclosed with this letter is U. S. Steel – Minntac's (Minntac) Quarterly Excess Emissions Reporting Form for the 4th quarter of 2020. $NO_x/SO_2$ Continuous Emission Monitoring Systems (CEMS) are certified on all Agglomerator Waste Gas Lines.

***Deviations associated with Emission Limits***

There were no deviations during the 4th quarter of 2020.

***Deviations associated with Monitor Downtime***

There were one hundred and nine instances of monitor downtime for either NOx or $SO_2$. The individual downtime durations and causes are listed in the monitor downtime section of this report.

***Deviations associated with Monitor Bypass***

Minntac utilizes a grate/kiln system for pelletizing taconite. Although this is an extremely hot process (with temperatures exceed 2500°F in the kiln), the equipment is designed to withstand the high temperatures and will do so during normal operation. However, the grate is very susceptible to heat damage during upset conditions or if stopped for any reason while it is hot. To prevent equipment damage and heat related safety issues during these situations, large amounts of heat must be released from the grate as soon as possible. For that reason the system was designed such that when the grate stops or gets overheated, a stack cap is lifted to release heat through an emergency stack. At this time the monitor is bypassed. These situations are the only times the monitor is bypassed. Because they represent upset conditions or process downtime (production loss), the company has a strong vested interest in minimizing both the number and duration of occurrences.

The times listed in the monitor bypass section are when the grate emergency stack cap is open and there is combustion in the kiln. This is the only time when any $NO_x$ or $SO_2$ is emitted. Times when the cap is open but there is no combustion in the kiln are not listed.

If you have any questions concerning these forms, please contact Stephani Campbell at (218) 778-8684.

Sincerely,

Lukas Klemke
Plant Manager – Minntac

Enclosure

cc: Steve Palzkill – MPCA
File

Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

# DRF-1

**Excess Emissions Reporting Form**

Air Quality Permit Program

*Doc Type: Excess Emission Report*

**Note:** Please complete, and remit **only** the forms. Please see the instructions to ensure proper use and understanding of definitions.
**Do not print and return the instructions.**

## General Information about Deviation and Compliance Reporting

If your permit requires you to submit deviation reports or an annual compliance certification, you should use the Deviation Reporting Forms (DRFs) and Annual Compliance Certification Report (CR-04), unless you get Minnesota Pollution Control Agency (MPCA) approval to use another format or your facility's permit specifies otherwise. There are two separate DRF forms: DRF-1 and DRF-2.

**DRF-1** is used to report direct excess stack emissions (EE) recorded by Continuous Emission Monitoring Systems (CEMS) and Continuous Opacity Monitoring Systems
**DRF-2** is used to report deviations recorded by periodic monitoring systems, deviations of permitted operating conditions and surrogate parameters whether recorded
*Some examples: flow rate, temperature, throughput, control equipment operating parameters, fuel-use records*
**CR-04:** is used to report facility compliance status at the end of each year if required by your permit.

**Address hard copy report submittals to:** Air Compliance Tracking Coordinator, Minnesota Pollution Control Agency
520 Lafayette Road North, St. Paul, Minnesota 55155-4195

**Or e-mail a signed and scanned PDF copy to:** AQRoutineReport.PCA@state.mn.us
(see e-mail instructions in "Routine Air Report Instructions Letter" at:
http://www.pca.state.mn.us/nwqh472

## 1) General Facility Information

| | | | |
|---|---|---|---|
| Facility name: | United States Steel Corporation, Minnesota Ore Operations, Minntac | AQ file no.: | 26A |
| County: | St. Louis | AQ permit #: | 13700005 |
| Report covers quarter: | Fourth | Year: | 2020 |

## 2) CEMS/COMS Data Summary Table

| | | | | Duration of Monitor Downtime | | Duration of Excess Emissions (EE) | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2a) Monitor ID Number | 2b) Monitor ID Pollutant | 2c) EU/SV ID Number | 2d) Total Operating Time (TOT) | 3i) Total Duration of Monitor Downtime (hr) | 2e) **Downtime % Of TOT** | 4l) Cumulative Duration of Exempt EE | 2f) **Exempt EE % of TOT** | 4m) Cumulative Total Duration of All EE | 2g) **Total EE % of TOT** |
| MR 001 | NOx | SV-103 | 2179 | 14 | **0.6%** | 0 | **0%** | 0 | **0%** |
| MR 002 | NOx | SV-118 | 2110 | 16 | **0.8%** | 0 | **0%** | 0 | **0%** |
| MR 003 | NOx | SV-127 | 2195 | 4 | **0.2%** | 0 | **0%** | 0 | **0%** |
| MR 004 | NOx | SV-144 | 2174 | 37 | **1.7%** | 0 | **0%** | 0 | **0%** |
| MR 005 | NOx | SV-151 | 2176 | 54 | **2.5%** | 0 | **0%** | 0 | **0%** |
| MR 001 | SO2 | SV-103 | 2179 | 36 | **1.7%** | 0 | **0%** | 0 | **0%** |
| MR 002 | SO2 | SV-118 | 2110 | 17 | **0.8%** | 0 | **0%** | 0 | **0%** |
| MR 003 | SO2 | SV-127 | 2195 | 4 | **0.2%** | 0 | **0%** | 0 | **0%** |
| MR 004 | SO2 | SV-144 | 2174 | 34 | **1.6%** | 0 | **0%** | 0 | **0%** |
| MR 005 | SO2 | SV-151 | 2176 | 46 | **2.1%** | 0 | **0%** | 0 | **0%** |

**3) Duration of Monitor Downtime:** Provide the following information regarding each period of monitor downtime. Make a separate table for each monitor, as needed.

| 3a) Monitor ID Number | 3b) Pollutant or parameter monitored | 3c) Emission Unit Being Monitored | 3d) Beginning Date and Time of Downtime | 3e) End Date and Time of Downtime | 3f) Duration of Downtime (minutes) | 3g) Reason for Monitor Downtime (clarifying comments) | 3h) Corrective ActionTaken (clarifying comments) |
|---|---|---|---|---|---|---|---|
| Line 3 | NOx | SV103 | 10/15/2020 09:00:00 | 10/15/2020 09:59:00 | 60 | Sample Interface Malfunction | Performed necessary maintenance |
| Line 3 | NOx | SV103 | 10/22/2020 05:00:00 | 10/22/2020 05:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 3 | NOx | SV103 | 10/24/2020 05:00:00 | 10/24/2020 05:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 3 | NOx | SV103 | 10/25/2020 06:00:00 | 10/25/2020 09:59:00 | 240 | Excess Drift Primary Analyzer | Performed necessary maintenance |
| Line 3 | NOx | SV103 | 12/18/2020 05:00:00 | 12/18/2020 05:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 3 | NOx | SV103 | 12/19/2020 05:00:00 | 12/19/2020 05:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 3 | NOx | SV103 | 12/19/2020 06:00:00 | 12/19/2020 09:59:00 | 240 | Excess Drift Primary Analyzer | Performed necessary maintenance |
| Line 3 | NOx | SV103 | 12/19/2020 10:00:00 | 12/19/2020 10:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 3 | SO2 | SV103 | 10/15/2020 09:00:00 | 10/15/2020 09:59:00 | 60 | Sample Interface Malfunction | Performed necessary maintenance |
| Line 3 | SO2 | SV103 | 10/22/2020 05:00:00 | 10/22/2020 05:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 3 | SO2 | SV103 | 10/24/2020 05:00:00 | 10/24/2020 05:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 3 | SO2 | SV103 | 12/17/2020 09:00:00 | 12/17/2020 15:59:00 | 420 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 3 | SO2 | SV103 | 12/18/2020 05:00:00 | 12/18/2020 05:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 3 | SO2 | SV103 | 12/19/2020 05:00:00 | 12/19/2020 05:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 3 | SO2 | SV103 | 12/19/2020 06:00:00 | 12/19/2020 09:59:00 | 240 | Excess Drift Primary Analyzer | Performed necessary maintenance |
| Line 3 | SO2 | SV103 | 12/19/2020 10:00:00 | 12/19/2020 10:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 3 | SO2 | SV103 | 12/20/2020 05:00:00 | 12/20/2020 05:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 3 | SO2 | SV103 | 12/20/2020 06:00:00 | 12/20/2020 08:59:00 | 180 | Excess Drift Primary Analyzer | Performed necessary maintenance |
| Line 3 | SO2 | SV103 | 12/20/2020 09:00:00 | 12/20/2020 09:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 3 | SO2 | SV103 | 12/21/2020 05:00:00 | 12/21/2020 05:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 3 | SO2 | SV103 | 12/21/2020 06:00:00 | 12/21/2020 09:59:00 | 240 | Excess Drift Primary Analyzer | Performed necessary maintenance |
| Line 3 | SO2 | SV103 | 12/22/2020 05:00:00 | 12/22/2020 05:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 3 | SO2 | SV103 | 12/22/2020 06:00:00 | 12/22/2020 09:59:00 | 240 | Excess Drift Primary Analyzer | Performed necessary maintenance |
| Line 3 | SO2 | SV103 | 12/23/2020 05:00:00 | 12/23/2020 05:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 3 | SO2 | SV103 | 12/23/2020 06:00:00 | 12/23/2020 08:59:00 | 180 | Excess Drift Primary Analyzer | Performed necessary maintenance |
| Line 4 | NOx | SV118 | 10/08/2020 13:00:00 | 10/08/2020 13:59:00 | 60 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 4 | NOx | SV118 | 10/15/2020 13:00:00 | 10/15/2020 15:59:00 | 180 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 4 | NOx | SV118 | 10/21/2020 06:00:00 | 10/21/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 4 | NOx | SV118 | 10/30/2020 06:00:00 | 10/30/2020 08:59:00 | 180 | Automatic Calibration | Performed necessary maintenance |
| Line 4 | NOx | SV118 | 11/05/2020 06:00:00 | 11/05/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 4 | NOx | SV118 | 12/09/2020 06:00:00 | 12/09/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |

**3) Duration of Monitor Downtime:** Provide the following information regarding each period of monitor downtime. Make a separate table for each monitor, as needed.

| 3a) Monitor ID Number | 3b) Pollutant or parameter monitored | 3c) Emission Unit Being Monitored | 3d) Beginning Date and Time of Downtime | 3e) End Date and Time of Downtime | 3f) Duration of Downtime (minutes) | 3g) Reason for Monitor Downtime (clarifying comments) | 3h) Corrective ActionTaken (clarifying comments) |
|---|---|---|---|---|---|---|---|
| Line 4 | NOx | SV118 | 12/22/2020 06:00:00 | 12/22/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 4 | NOx | SV118 | 12/22/2020 07:00:00 | 12/22/2020 10:59:00 | 240 | Excess Drift Primary Analyzer | Performed necessary maintenance |
| Line 4 | NOx | SV118 | 12/26/2020 06:00:00 | 12/26/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 4 | SO2 | SV118 | 10/15/2020 13:00:00 | 10/15/2020 15:59:00 | 180 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 4 | SO2 | SV118 | 10/21/2020 06:00:00 | 10/21/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 4 | SO2 | SV118 | 10/30/2020 06:00:00 | 10/30/2020 08:59:00 | 180 | Automatic Calibration | Performed necessary maintenance |
| Line 4 | SO2 | SV118 | 11/05/2020 06:00:00 | 11/05/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 4 | SO2 | SV118 | 12/09/2020 06:00:00 | 12/09/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 4 | SO2 | SV118 | 12/22/2020 06:00:00 | 12/22/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 4 | SO2 | SV118 | 12/22/2020 07:00:00 | 12/22/2020 10:59:00 | 240 | Excess Drift Primary Analyzer | Performed necessary maintenance |
| Line 4 | SO2 | SV118 | 12/26/2020 06:00:00 | 12/26/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 4 | SO2 | SV118 | 12/26/2020 16:00:00 | 12/26/2020 17:59:00 | 120 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 5 | SO2 | SV127 | 10/04/2020 04:00:00 | 10/04/2020 04:59:00 | 60 | Sample Interface Malfunction | Performed necessary maintenance |
| Line 5 | SO2 | SV127 | 10/14/2020 06:00:00 | 10/14/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 5 | SO2 | SV127 | 10/14/2020 09:00:00 | 10/14/2020 09:59:00 | 60 | Sample Interface Malfunction | Performed necessary maintenance |
| Line 5 | SO2 | SV127 | 12/04/2020 23:00:00 | 12/04/2020 23:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 5 | NOx | SV127 | 12/04/2020 23:00:00 | 12/04/2020 23:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 6 | NOx | SV144 | 10/19/2020 06:00:00 | 10/19/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 6 | NOx | SV144 | 11/07/2020 14:00:00 | 11/07/2020 14:59:00 | 60 | Sample Interface Malfunction | Performed necessary maintenance |
| Line 6 | NOx | SV144 | 11/17/2020 06:00:00 | 11/17/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 6 | NOx | SV144 | 11/17/2020 07:00:00 | 11/17/2020 07:59:00 | 60 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 6 | NOx | SV144 | 11/17/2020 11:00:00 | 11/17/2020 11:59:00 | 60 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 6 | NOx | SV144 | 11/30/2020 07:00:00 | 11/30/2020 09:59:00 | 180 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 6 | NOx | SV144 | 12/11/2020 06:00:00 | 12/11/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 6 | NOx | SV144 | 12/11/2020 07:00:00 | 12/11/2020 08:59:00 | 120 | Excess Drift Primary Analyzer | Performed necessary maintenance |
| Line 6 | NOx | SV144 | 12/12/2020 06:00:00 | 12/12/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 6 | NOx | SV144 | 12/12/2020 07:00:00 | 12/13/2020 05:59:00 | 1,380 | Excess Drift Primary Analyzer | Performed necessary maintenance |
| Line 6 | NOx | SV144 | 12/18/2020 06:00:00 | 12/18/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 6 | NOx | SV144 | 12/19/2020 06:00:00 | 12/19/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 6 | SO2 | SV144 | 10/09/2020 13:00:00 | 10/09/2020 19:59:00 | 420 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 6 | SO2 | SV144 | 10/10/2020 12:00:00 | 10/10/2020 21:59:00 | 600 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 6 | SO2 | SV144 | 10/11/2020 06:00:00 | 10/11/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 6 | SO2 | SV144 | 10/11/2020 07:00:00 | 10/11/2020 07:59:00 | 60 | Excess Drift Primary Analyzer | Performed necessary maintenance |
| Line 6 | SO2 | SV144 | 10/19/2020 06:00:00 | 10/19/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 6 | SO2 | SV144 | 11/17/2020 06:00:00 | 11/17/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |

**3) Duration of Monitor Downtime:** Provide the following information regarding each period of monitor downtime. Make a separate table for each monitor, as needed.

| 3a) Monitor ID Number | 3b) Pollutant or parameter monitored | 3c) Emission Unit Being Monitored | 3d) Beginning Date and Time of Downtime | 3e) End Date and Time of Downtime | 3f) Duration of Downtime (minutes) | 3g) Reason for Monitor Downtime (clarifying comments) | 3h) Corrective ActionTaken (clarifying comments) |
|---|---|---|---|---|---|---|---|
| Line 6 | SO2 | SV144 | 11/17/2020 07:00:00 | 11/17/2020 07:59:00 | 60 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 6 | SO2 | SV144 | 11/17/2020 11:00:00 | 11/17/2020 11:59:00 | 60 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 6 | SO2 | SV144 | 12/02/2020 02:00:00 | 12/02/2020 05:59:00 | 240 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 6 | SO2 | SV144 | 12/02/2020 06:00:00 | 12/02/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 6 | SO2 | SV144 | 12/02/2020 07:00:00 | 12/02/2020 09:59:00 | 180 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 6 | SO2 | SV144 | 12/02/2020 10:00:00 | 12/02/2020 10:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 6 | SO2 | SV144 | 12/18/2020 06:00:00 | 12/18/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 6 | SO2 | SV144 | 12/19/2020 06:00:00 | 12/19/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 7 | NOx | SV151 | 11/01/2020 07:00:00 | 11/02/2020 05:59:00 | 1,380 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 7 | NOx | SV151 | 11/02/2020 06:00:00 | 11/02/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 7 | NOx | SV151 | 11/02/2020 07:00:00 | 11/02/2020 13:59:00 | 420 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 7 | NOx | SV151 | 11/09/2020 23:00:00 | 11/09/2020 23:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 7 | NOx | SV151 | 11/21/2020 07:00:00 | 11/21/2020 07:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 7 | NOx | SV151 | 11/21/2020 08:00:00 | 11/21/2020 09:59:00 | 120 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 7 | NOx | SV151 | 11/23/2020 08:00:00 | 11/23/2020 08:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 7 | NOx | SV151 | 11/29/2020 06:00:00 | 11/29/2020 07:59:00 | 120 | Automatic Calibration | Performed necessary maintenance |
| Line 7 | NOx | SV151 | 11/29/2020 08:00:00 | 11/29/2020 08:59:00 | 60 | Excess Drift Primary Analyzer | Performed necessary maintenance |
| Line 7 | NOx | SV151 | 11/29/2020 09:00:00 | 11/29/2020 09:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 7 | NOx | SV151 | 12/01/2020 00:00:00 | 12/01/2020 00:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 7 | NOx | SV151 | 12/01/2020 06:00:00 | 12/01/2020 07:59:00 | 120 | Automatic Calibration | Performed necessary maintenance |
| Line 7 | NOx | SV151 | 12/07/2020 09:00:00 | 12/07/2020 09:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 7 | NOx | SV151 | 12/10/2020 06:00:00 | 12/10/2020 07:59:00 | 120 | Automatic Calibration | Performed necessary maintenance |
| Line 7 | NOx | SV151 | 12/15/2020 02:00:00 | 12/15/2020 02:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 7 | NOx | SV151 | 12/15/2020 03:00:00 | 12/15/2020 05:59:00 | 180 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 7 | NOx | SV151 | 12/15/2020 06:00:00 | 12/15/2020 07:59:00 | 120 | Automatic Calibration | Performed necessary maintenance |
| Line 7 | NOx | SV151 | 12/15/2020 08:00:00 | 12/15/2020 09:59:00 | 120 | Excess Drift Primary Analyzer | Performed necessary maintenance |
| Line 7 | SO2 | SV151 | 11/01/2020 07:00:00 | 11/02/2020 05:59:00 | 1,380 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 7 | SO2 | SV151 | 11/02/2020 06:00:00 | 11/02/2020 06:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 7 | SO2 | SV151 | 11/02/2020 07:00:00 | 11/02/2020 13:59:00 | 420 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 7 | SO2 | SV151 | 11/09/2020 23:00:00 | 11/09/2020 23:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 7 | SO2 | SV151 | 11/21/2020 07:00:00 | 11/21/2020 07:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 7 | SO2 | SV151 | 11/21/2020 08:00:00 | 11/21/2020 09:59:00 | 120 | Primary Analyzer Malfunction | Performed necessary maintenance |
| Line 7 | SO2 | SV151 | 11/23/2020 08:00:00 | 11/23/2020 08:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 7 | SO2 | SV151 | 11/29/2020 06:00:00 | 11/29/2020 07:59:00 | 120 | Automatic Calibration | Performed necessary maintenance |
| Line 7 | SO2 | SV151 | 11/29/2020 08:00:00 | 11/29/2020 08:59:00 | 60 | Excess Drift Primary Analyzer | Performed necessary maintenance |

**3) Duration of Monitor Downtime:** Provide the following information regarding each period of monitor downtime. Make a separate table for each monitor, as needed.

| 3a) Monitor ID Number | 3b) Pollutant or parameter monitored | 3c) Emission Unit Being Monitored | 3d) Beginning Date and Time of Downtime | 3e) End Date and Time of Downtime | 3f) Duration of Downtime (minutes) | 3g) Reason for Monitor Downtime (clarifying comments) | 3h) Corrective ActionTaken (clarifying comments) |
|---|---|---|---|---|---|---|---|
| Line 7 | SO2 | SV151 | 11/29/2020 09:00:00 | 11/29/2020 09:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 7 | SO2 | SV151 | 12/01/2020 00:00:00 | 12/01/2020 00:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 7 | SO2 | SV151 | 12/01/2020 06:00:00 | 12/01/2020 07:59:00 | 120 | Automatic Calibration | Performed necessary maintenance |
| Line 7 | SO2 | SV151 | 12/07/2020 09:00:00 | 12/07/2020 09:59:00 | 60 | Automatic Calibration | Performed necessary maintenance |
| Line 7 | SO2 | SV151 | 12/10/2020 06:00:00 | 12/10/2020 07:59:00 | 120 | Automatic Calibration | Performed necessary maintenance |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | **3i) Total duration of downtime:** | **259** | **hours** | |

**4) Duration of Excess Emissions:** Provide the following information regarding each individual excess emission identified by a monitor. Make a separate table for each monitor, as needed.

| 4a) Emission Unit ID Number | 4b) Monitor ID Number | 4c) Pollutant or Parameter Monitored | 4d) Beginning Date and Time of EE | 4e) End Date and Time of EE | 4f) Limit and Averaging Period | 4g) Highest Reading of EE with Units (example: 5 lb/hr, etc) | 4h) Duration of Exempt EE (include these entries as part of 4i) | 4i) Total Duration of All EE | 4j) Cause of EE (clarifying comments) | 4k) Corrective Action Taken (clarifying comments) |
|---|---|---|---|---|---|---|---|---|---|---|
| SV-103 | MR 001 | Nox/SO2 | N/A | N/A | N/A | N/A | 0 | 0 | N/A | N/A |
| SV-118 | MR 002 | Nox/SO2 | N/A | N/A | N/A | N/A | 0 | 0 | N/A | N/A |
| SV-127 | MR 003 | Nox/SO2 | N/A | N/A | N/A | N/A | 0 | 0 | N/A | N/A |
| SV-144 | MR 004 | Nox/SO2 | N/A | N/A | N/A | N/A | 0 | 0 | N/A | N/A |
| SV-151 | MR 005 | Nox/SO2 | N/A | N/A | N/A | N/A | 0 | 0 | N/A | N/A |
| | | | | | | **4l) Cumulative Duration of Exempt Excess Emissions:** | | 0 | **4m) Cumulative Total** | 0 |

**5) Monitor Bypasses:** Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system *See Minn. R. 7017.1110 subp. 2c*

| 5a) | 5b) | 5c) | 5d) | 5e) | 5f) | 5g) | 5h) | 5i) | 5j) |
|---|---|---|---|---|---|---|---|---|---|
| Monitor ID number | Emission Unit Required to be Monitored | Pollutant and Limit Required to be Monitored | Beginning Date and Time of Bypass Period | End date and time of bypass period | Duration of monitor bypass (minutes) | Was P.C.E. operating during bypass period? | Duration of allowable monitor bypass | Reason for monitor bypass (clarifying comments) | Corrective action taken (clarifying comments) |
| Line 3 | SV103 | NOx/SO2 | 10/8/20 8:39 | 10/8/20 10:03 | 84 | YES | 84 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 10/15/20 7:56 | 10/15/20 10:11 | 134 | YES | 134 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 10/20/20 21:15 | 10/20/20 22:30 | 75 | YES | 75 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 10/20/20 22:30 | 10/20/20 22:59 | 29 | YES | 29 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 10/21/20 22:59 | 10/22/20 6:30 | 451 | YES | 451 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 10/22/20 6:30 | 10/22/20 14:30 | 480 | YES | 480 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 10/22/20 14:30 | 10/22/20 16:50 | 140 | YES | 140 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 10/22/20 17:03 | 10/22/20 21:36 | 273 | YES | 273 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 10/23/20 1:30 | 10/23/20 2:28 | 58 | YES | 58 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 10/23/20 8:41 | 10/23/20 9:44 | 63 | YES | 63 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 10/23/20 9:48 | 10/23/20 9:59 | 11 | YES | 11 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 10/23/20 10:59 | 10/23/20 12:58 | 119 | YES | 119 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 10/23/20 13:05 | 10/23/20 14:30 | 85 | YES | 85 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 10/23/20 14:30 | 10/23/20 22:30 | 480 | YES | 480 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 10/23/20 22:30 | 10/24/20 6:30 | 480 | YES | 480 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 10/24/20 6:30 | 10/24/20 14:30 | 480 | YES | 480 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 10/24/20 14:30 | 10/24/20 19:43 | 313 | YES | 313 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 10/24/20 19:59 | 10/24/20 22:30 | 151 | YES | 151 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 10/24/20 22:30 | 10/25/20 0:11 | 101 | YES | 101 | Bypass necessary to protect plant equipment. | N/A |

**5) Monitor Bypasses:** Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system *See Minn. R. 7017.1110 subp. 2c*

| 5a) | 5b) | 5c) | 5d) | 5e) | 5f) | 5g) | 5h) | 5i) | 5j) |
|---|---|---|---|---|---|---|---|---|---|
| Monitor ID number | Emission Unit Required to be Monitored | Pollutant and Limit Required to be Monitored | Beginning Date and Time of Bypass Period | End date and time of bypass period | Duration of monitor bypass (minutes) | Was P.C.E. operating during bypass period? | Duration of allowable monitor bypass | Reason for monitor bypass (clarifying comments) | Corrective action taken (clarifying comments) |
| Line 3 | SV103 | NOx/SO2 | 10/25/20 0:52 | 10/25/20 1:58 | 66 | YES | 66 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 10/25/20 2:44 | 10/25/20 3:53 | 70 | YES | 70 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 10/25/20 4:57 | 10/25/20 6:12 | 75 | YES | 75 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 10/25/20 6:30 | 10/25/20 8:19 | 109 | YES | 109 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 11/17/20 22:30 | 11/17/20 23:59 | 89 | YES | 89 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 11/18/20 8:59 | 11/18/20 14:30 | 331 | YES | 331 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 11/18/20 14:30 | 11/18/20 20:14 | 344 | YES | 344 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 11/19/20 16:55 | 11/19/20 19:12 | 137 | YES | 137 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 11/23/20 3:14 | 11/23/20 3:31 | 16 | YES | 16 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 12/1/20 7:57 | 12/1/20 8:58 | 61 | YES | 61 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 12/7/20 3:34 | 12/7/20 4:12 | 38 | YES | 38 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 12/16/20 12:42 | 12/16/20 13:24 | 42 | YES | 42 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 12/17/20 8:50 | 12/17/20 8:59 | 10 | YES | 10 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 12/17/20 9:17 | 12/17/20 9:27 | 10 | YES | 10 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 12/17/20 20:00 | 12/17/20 22:30 | 150 | YES | 150 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 12/17/20 22:30 | 12/17/20 23:16 | 46 | YES | 46 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 12/17/20 23:55 | 12/18/20 4:08 | 253 | YES | 253 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 12/18/20 4:37 | 12/18/20 6:30 | 113 | YES | 113 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 12/18/20 6:30 | 12/18/20 8:17 | 107 | YES | 107 | Bypass necessary to protect plant equipment. | N/A |

**5) Monitor Bypasses:** Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system *See Minn. R. 7017.1110 subp. 2c*

| 5a) | 5b) | 5c) | 5d) | 5e) | 5f) | 5g) | 5h) | 5i) | 5j) |
|---|---|---|---|---|---|---|---|---|---|
| Monitor ID number | Emission Unit Required to be Monitored | Pollutant and Limit Required to be Monitored | Beginning Date and Time of Bypass Period | End date and time of bypass period | Duration of monitor bypass (minutes) | Was P.C.E. operating during bypass period? | Duration of allowable monitor bypass | Reason for monitor bypass (clarifying comments) | Corrective action taken (clarifying comments) |
| Line 3 | SV103 | NOx/SO2 | 12/23/20 20:18 | 12/23/20 20:40 | 22 | YES | 22 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 12/25/20 5:02 | 12/25/20 5:32 | 30 | YES | 30 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 12/26/20 10:59 | 12/26/20 14:30 | 211 | YES | 211 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 12/26/20 14:30 | 12/26/20 21:10 | 400 | YES | 400 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 12/27/20 11:41 | 12/27/20 11:56 | 16 | YES | 16 | Bypass necessary to protect plant equipment. | N/A |
| Line 3 | SV103 | NOx/SO2 | 12/28/20 10:20 | 12/28/20 10:48 | 28 | YES | 28 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/6/20 8:03 | 10/6/20 8:13 | 9 | YES | 9 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/7/20 8:13 | 10/7/20 8:25 | 12 | YES | 12 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/8/20 8:44 | 10/8/20 11:38 | 174 | YES | 174 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/8/20 11:43 | 10/8/20 12:08 | 26 | YES | 26 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/9/20 7:56 | 10/9/20 9:00 | 64 | YES | 64 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/13/20 22:31 | 10/13/20 22:42 | 11 | YES | 11 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/14/20 23:53 | 10/15/20 0:00 | 8 | YES | 8 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/20/20 13:01 | 10/20/20 13:41 | 40 | YES | 40 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/20/20 13:47 | 10/20/20 13:56 | 9 | YES | 9 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/21/20 1:06 | 10/21/20 2:34 | 88 | YES | 88 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/21/20 6:25 | 10/21/20 6:30 | 5 | YES | 5 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/21/20 6:30 | 10/21/20 14:30 | 480 | YES | 480 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/21/20 14:30 | 10/21/20 22:30 | 480 | YES | 480 | Bypass necessary to protect plant equipment. | N/A |

**5) Monitor Bypasses:** Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system *See Minn. R. 7017.1110 subp. 2c*

| 5a) | 5b) | 5c) | 5d) | 5e) | 5f) | 5g) | 5h) | 5i) | 5j) |
|---|---|---|---|---|---|---|---|---|---|
| Monitor ID number | Emission Unit Required to be Monitored | Pollutant and Limit Required to be Monitored | Beginning Date and Time of Bypass Period | End date and time of bypass period | Duration of monitor bypass (minutes) | Was P.C.E. operating during bypass period? | Duration of allowable monitor bypass | Reason for monitor bypass (clarifying comments) | Corrective action taken (clarifying comments) |
| Line 4 | SV118 | NOx/SO2 | 10/21/20 22:30 | 10/22/20 2:48 | 258 | YES | 258 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/22/20 13:22 | 10/22/20 14:14 | 53 | YES | 53 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/23/20 7:33 | 10/23/20 14:30 | 417 | YES | 417 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/23/20 14:30 | 10/23/20 22:30 | 480 | YES | 480 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/23/20 22:30 | 10/24/20 0:25 | 115 | YES | 115 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/24/20 1:12 | 10/24/20 1:22 | 10 | YES | 10 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/24/20 1:28 | 10/24/20 1:35 | 7 | YES | 7 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/26/20 15:13 | 10/26/20 16:13 | 60 | YES | 60 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/26/20 16:19 | 10/26/20 16:22 | 3 | YES | 3 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/26/20 16:42 | 10/26/20 17:56 | 74 | YES | 74 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/27/20 13:27 | 10/27/20 14:30 | 63 | YES | 63 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/27/20 14:30 | 10/27/20 14:48 | 18 | YES | 18 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/30/20 0:29 | 10/30/20 3:33 | 184 | YES | 184 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/30/20 5:10 | 10/30/20 6:30 | 80 | YES | 80 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/30/20 6:30 | 10/30/20 7:16 | 46 | YES | 46 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/31/20 12:39 | 10/31/20 13:26 | 47 | YES | 47 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 10/31/20 13:30 | 10/31/20 13:33 | 3 | YES | 3 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 11/1/20 1:30 | 11/1/20 4:39 | 189 | YES | 189 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 11/1/20 22:29 | 11/1/20 22:30 | 1 | YES | 1 | Bypass necessary to protect plant equipment. | N/A |

**5) Monitor Bypasses:** Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system *See Minn. R. 7017.1110 subp. 2c*

| 5a) | 5b) | 5c) | 5d) | 5e) | 5f) | 5g) | 5h) | 5i) | 5j) |
|---|---|---|---|---|---|---|---|---|---|
| Monitor ID number | Emission Unit Required to be Monitored | Pollutant and Limit Required to be Monitored | Beginning Date and Time of Bypass Period | End date and time of bypass period | Duration of monitor bypass (minutes) | Was P.C.E. operating during bypass period? | Duration of allowable monitor bypass | Reason for monitor bypass (clarifying comments) | Corrective action taken (clarifying comments) |
| Line 4 | SV118 | NOx/SO2 | 11/1/20 22:30 | 11/1/20 22:59 | 29 | YES | 29 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 11/4/20 17:59 | 11/4/20 22:30 | 271 | YES | 271 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 11/4/20 22:30 | 11/5/20 6:30 | 480 | YES | 480 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 11/5/20 6:30 | 11/5/20 12:51 | 381 | YES | 381 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 11/5/20 13:26 | 11/5/20 14:11 | 45 | YES | 45 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 11/5/20 18:39 | 11/5/20 19:47 | 68 | YES | 68 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 11/5/20 22:41 | 11/5/20 22:57 | 16 | YES | 16 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 11/5/20 23:25 | 11/6/20 0:45 | 80 | YES | 80 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 11/6/20 0:45 | 11/6/20 0:56 | 11 | YES | 11 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 11/11/20 9:19 | 11/11/20 12:30 | 190 | YES | 190 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 11/17/20 8:16 | 11/17/20 11:10 | 174 | YES | 174 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 11/26/20 6:37 | 11/26/20 7:19 | 42 | YES | 42 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 11/30/20 7:14 | 11/30/20 7:22 | 9 | YES | 9 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 11/30/20 7:33 | 11/30/20 7:42 | 9 | YES | 9 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 11/30/20 7:48 | 11/30/20 8:01 | 13 | YES | 13 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 12/4/20 9:51 | 12/4/20 14:09 | 258 | YES | 258 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 12/4/20 22:26 | 12/4/20 22:30 | 4 | YES | 4 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 12/4/20 22:30 | 12/5/20 2:38 | 248 | YES | 248 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 12/7/20 13:27 | 12/7/20 13:59 | 32 | YES | 32 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 12/8/20 20:59 | 12/8/20 22:30 | 91 | YES | 91 | Bypass necessary to protect plant equipment. | N/A |

**5) Monitor Bypasses:** Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system *See Minn. R. 7017.1110 subp. 2c*

| 5a) | 5b) | 5c) | 5d) | 5e) | 5f) | 5g) | 5h) | 5i) | 5j) |
|---|---|---|---|---|---|---|---|---|---|
| Monitor ID number | Emission Unit Required to be Monitored | Pollutant and Limit Required to be Monitored | Beginning Date and Time of Bypass Period | End date and time of bypass period | Duration of monitor bypass (minutes) | Was P.C.E. operating during bypass period? | Duration of allowable monitor bypass | Reason for monitor bypass (clarifying comments) | Corrective action taken (clarifying comments) |
| Line 4 | SV118 | NOx/SO2 | 12/8/20 22:30 | 12/9/20 6:30 | 480 | YES | 480 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 12/9/20 6:30 | 12/9/20 14:30 | 480 | YES | 480 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 12/9/20 14:30 | 12/9/20 16:43 | 133 | YES | 133 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 12/9/20 17:22 | 12/9/20 20:50 | 208 | YES | 208 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 12/9/20 21:00 | 12/9/20 22:13 | 72 | YES | 72 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 12/19/20 5:58 | 12/19/20 6:08 | 10 | YES | 10 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 12/26/20 1:42 | 12/26/20 6:30 | 288 | YES | 288 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 12/26/20 6:30 | 12/26/20 14:30 | 480 | YES | 480 | Bypass necessary to protect plant equipment. | N/A |
| Line 4 | SV118 | NOx/SO2 | 12/26/20 14:30 | 12/26/20 16:46 | 136 | YES | 136 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 10/1/20 12:30 | 10/1/20 13:51 | 80 | YES | 80 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 10/3/20 20:21 | 10/3/20 20:54 | 32 | YES | 32 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 10/4/20 5:00 | 10/4/20 5:10 | 9 | YES | 9 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 10/7/20 10:16 | 10/7/20 11:43 | 87 | YES | 87 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 10/8/20 8:37 | 10/8/20 10:26 | 109 | YES | 109 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 10/14/20 6:36 | 10/14/20 10:08 | 212 | YES | 212 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 10/14/20 20:07 | 10/14/20 20:11 | 4 | YES | 4 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 10/14/20 20:14 | 10/14/20 20:16 | 2 | YES | 2 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 10/20/20 5:32 | 10/20/20 6:01 | 29 | YES | 29 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 10/20/20 6:38 | 10/20/20 7:25 | 48 | YES | 48 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 10/20/20 9:17 | 10/20/20 9:30 | 12 | YES | 12 | Bypass necessary to protect plant equipment. | N/A |

**5) Monitor Bypasses:** Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system *See Minn. R. 7017.1110 subp. 2c*

| 5a) | 5b) | 5c) | 5d) | 5e) | 5f) | 5g) | 5h) | 5i) | 5j) |
|---|---|---|---|---|---|---|---|---|---|
| Monitor ID number | Emission Unit Required to be Monitored | Pollutant and Limit Required to be Monitored | Beginning Date and Time of Bypass Period | End date and time of bypass period | Duration of monitor bypass (minutes) | Was P.C.E. operating during bypass period? | Duration of allowable monitor bypass | Reason for monitor bypass (clarifying comments) | Corrective action taken (clarifying comments) |
| Line 5 | SV127 | NOx/SO2 | 10/20/20 11:02 | 10/20/20 11:32 | 30 | YES | 30 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 10/21/20 0:11 | 10/21/20 1:53 | 102 | YES | 102 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 10/21/20 7:33 | 10/21/20 10:03 | 150 | YES | 150 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 10/23/20 23:05 | 10/24/20 0:11 | 66 | YES | 66 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 10/26/20 15:14 | 10/26/20 15:57 | 43 | YES | 43 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 11/6/20 4:04 | 11/6/20 4:41 | 37 | YES | 37 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 11/11/20 9:24 | 11/11/20 11:59 | 156 | YES | 156 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 11/12/20 2:09 | 11/12/20 3:23 | 74 | YES | 74 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 11/12/20 8:01 | 11/12/20 9:17 | 76 | YES | 76 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 11/13/20 9:25 | 11/13/20 11:06 | 102 | YES | 102 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 11/18/20 7:37 | 11/18/20 8:01 | 24 | YES | 24 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 12/4/20 22:32 | 12/5/20 1:46 | 194 | YES | 194 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 12/7/20 22:26 | 12/7/20 22:30 | 4 | YES | 4 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 12/7/20 22:30 | 12/7/20 22:59 | 29 | YES | 29 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 12/8/20 11:59 | 12/8/20 14:30 | 151 | YES | 151 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 12/8/20 14:30 | 12/8/20 22:30 | 480 | YES | 480 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 12/8/20 22:30 | 12/9/20 0:16 | 106 | YES | 106 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 12/9/20 1:13 | 12/9/20 4:12 | 178 | YES | 178 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 12/14/20 8:06 | 12/14/20 8:49 | 44 | YES | 44 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 12/15/20 4:17 | 12/15/20 4:46 | 29 | YES | 29 | Bypass necessary to protect plant equipment. | N/A |

**5) Monitor Bypasses:** Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system *See Minn. R. 7017.1110 subp. 2c*

| 5a) | 5b) | 5c) | 5d) | 5e) | 5f) | 5g) | 5h) | 5i) | 5j) |
|---|---|---|---|---|---|---|---|---|---|
| Monitor ID number | Emission Unit Required to be Monitored | Pollutant and Limit Required to be Monitored | Beginning Date and Time of Bypass Period | End date and time of bypass period | Duration of monitor bypass (minutes) | Was P.C.E. operating during bypass period? | Duration of allowable monitor bypass | Reason for monitor bypass (clarifying comments) | Corrective action taken (clarifying comments) |
| Line 5 | SV127 | NOx/SO2 | 12/17/20 7:59 | 12/17/20 8:26 | 27 | YES | 27 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 12/28/20 10:00 | 12/28/20 11:35 | 95 | YES | 95 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 12/28/20 12:11 | 12/28/20 12:33 | 22 | YES | 22 | Bypass necessary to protect plant equipment. | N/A |
| Line 5 | SV127 | NOx/SO2 | 12/28/20 13:26 | 12/28/20 14:20 | 54 | YES | 54 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/3/20 2:21 | 10/3/20 3:58 | 97 | YES | 97 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/3/20 4:55 | 10/3/20 5:25 | 29 | YES | 29 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/4/20 15:17 | 10/4/20 15:34 | 18 | YES | 18 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/4/20 16:28 | 10/4/20 16:43 | 15 | YES | 15 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/4/20 18:15 | 10/4/20 18:52 | 37 | YES | 37 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/4/20 20:01 | 10/4/20 20:26 | 26 | YES | 26 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/5/20 0:26 | 10/5/20 1:16 | 49 | YES | 49 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/5/20 19:51 | 10/5/20 20:32 | 42 | YES | 42 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/6/20 8:29 | 10/6/20 9:04 | 35 | YES | 35 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/6/20 20:16 | 10/6/20 21:10 | 54 | YES | 54 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/6/20 22:30 | 10/6/20 22:59 | 29 | YES | 29 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/7/20 8:59 | 10/7/20 14:30 | 331 | YES | 331 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/7/20 14:30 | 10/7/20 21:46 | 436 | YES | 436 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/7/20 21:55 | 10/7/20 22:30 | 35 | YES | 35 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/7/20 22:30 | 10/8/20 0:50 | 140 | YES | 140 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/8/20 2:47 | 10/8/20 2:53 | 6 | YES | 6 | Bypass necessary to protect plant equipment. | N/A |

**5) Monitor Bypasses:** Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system *See Minn. R. 7017.1110 subp. 2c*

| 5a) | 5b) | 5c) | 5d) | 5e) | 5f) | 5g) | 5h) | 5i) | 5j) |
|---|---|---|---|---|---|---|---|---|---|
| Monitor ID number | Emission Unit Required to be Monitored | Pollutant and Limit Required to be Monitored | Beginning Date and Time of Bypass Period | End date and time of bypass period | Duration of monitor bypass (minutes) | Was P.C.E. operating during bypass period? | Duration of allowable monitor bypass | Reason for monitor bypass (clarifying comments) | Corrective action taken (clarifying comments) |
| Line 6 | SV144 | NOx/SO2 | 10/9/20 4:40 | 10/9/20 5:27 | 47 | YES | 47 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/18/20 4:10 | 10/18/20 4:42 | 32 | YES | 32 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/18/20 15:30 | 10/18/20 15:36 | 6 | YES | 6 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/18/20 15:43 | 10/18/20 15:51 | 7 | YES | 7 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/18/20 16:27 | 10/18/20 16:42 | 15 | YES | 15 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/18/20 18:07 | 10/18/20 18:22 | 15 | YES | 15 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/18/20 18:24 | 10/18/20 18:32 | 8 | YES | 8 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/18/20 19:44 | 10/18/20 20:02 | 18 | YES | 18 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/18/20 20:31 | 10/18/20 20:36 | 5 | YES | 5 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/18/20 20:53 | 10/18/20 21:01 | 7 | YES | 7 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/18/20 21:06 | 10/18/20 22:13 | 67 | YES | 67 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/18/20 22:20 | 10/18/20 22:30 | 10 | YES | 10 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/18/20 22:30 | 10/18/20 22:59 | 29 | YES | 29 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/18/20 23:03 | 10/19/20 6:30 | 447 | YES | 447 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/19/20 6:30 | 10/19/20 14:30 | 480 | YES | 480 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/19/20 14:30 | 10/19/20 20:50 | 380 | YES | 380 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/28/20 23:29 | 10/29/20 0:04 | 35 | YES | 35 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/29/20 1:13 | 10/29/20 1:46 | 33 | YES | 33 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 10/31/20 8:47 | 10/31/20 9:06 | 19 | YES | 19 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 11/2/20 17:31 | 11/2/20 17:44 | 13 | YES | 13 | Bypass necessary to protect plant equipment. | N/A |

**5) Monitor Bypasses:** Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system *See Minn. R. 7017.1110 subp. 2c*

| 5a) | 5b) | 5c) | 5d) | 5e) | 5f) | 5g) | 5h) | 5i) | 5j) |
|---|---|---|---|---|---|---|---|---|---|
| Monitor ID number | Emission Unit Required to be Monitored | Pollutant and Limit Required to be Monitored | Beginning Date and Time of Bypass Period | End date and time of bypass period | Duration of monitor bypass (minutes) | Was P.C.E. operating during bypass period? | Duration of allowable monitor bypass | Reason for monitor bypass (clarifying comments) | Corrective action taken (clarifying comments) |
| Line 6 | SV144 | NOx/SO2 | 11/3/20 6:51 | 11/3/20 8:56 | 125 | YES | 125 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 11/7/20 13:39 | 11/7/20 14:05 | 26 | YES | 26 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 11/10/20 22:30 | 11/10/20 22:59 | 29 | YES | 29 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 11/11/20 9:59 | 11/11/20 14:30 | 271 | YES | 271 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 11/11/20 14:30 | 11/11/20 22:08 | 458 | YES | 458 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 11/13/20 14:35 | 11/13/20 15:02 | 26 | YES | 26 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 11/14/20 7:59 | 11/14/20 8:41 | 42 | YES | 42 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 11/14/20 9:04 | 11/14/20 10:25 | 82 | YES | 82 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 11/14/20 11:35 | 11/14/20 14:30 | 175 | YES | 175 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 11/14/20 14:30 | 11/14/20 14:33 | 3 | YES | 3 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 11/16/20 18:17 | 11/16/20 22:30 | 253 | YES | 253 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 11/16/20 22:30 | 11/17/20 6:30 | 480 | YES | 480 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 11/17/20 6:30 | 11/17/20 14:25 | 475 | YES | 475 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/2/20 2:19 | 12/2/20 2:34 | 14 | YES | 14 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/2/20 2:19 | 12/2/20 2:34 | 14 | YES | 14 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/2/20 9:45 | 12/2/20 10:40 | 55 | YES | 55 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/3/20 2:10 | 12/3/20 2:20 | 10 | YES | 10 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/8/20 20:13 | 12/8/20 20:33 | 20 | YES | 20 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/10/20 10:04 | 12/10/20 11:01 | 57 | YES | 57 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/10/20 11:30 | 12/10/20 14:30 | 180 | YES | 180 | Bypass necessary to protect plant equipment. | N/A |

**5) Monitor Bypasses:** Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system *See Minn. R. 7017.1110 subp. 2c*

| 5a) | 5b) | 5c) | 5d) | 5e) | 5f) | 5g) | 5h) | 5i) | 5j) |
|---|---|---|---|---|---|---|---|---|---|
| Monitor ID number | Emission Unit Required to be Monitored | Pollutant and Limit Required to be Monitored | Beginning Date and Time of Bypass Period | End date and time of bypass period | Duration of monitor bypass (minutes) | Was P.C.E. operating during bypass period? | Duration of allowable monitor bypass | Reason for monitor bypass (clarifying comments) | Corrective action taken (clarifying comments) |
| Line 6 | SV144 | NOx/SO2 | 12/10/20 14:30 | 12/10/20 14:39 | 9 | YES | 9 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/10/20 15:07 | 12/10/20 20:20 | 313 | YES | 313 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/10/20 21:08 | 12/10/20 21:47 | 39 | YES | 39 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/14/20 19:21 | 12/14/20 20:25 | 64 | YES | 64 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/15/20 13:44 | 12/15/20 14:15 | 31 | YES | 31 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/15/20 19:52 | 12/15/20 20:21 | 29 | YES | 29 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/15/20 22:30 | 12/15/20 22:59 | 29 | YES | 29 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/16/20 5:59 | 12/16/20 14:30 | 511 | YES | 511 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/16/20 14:30 | 12/16/20 16:46 | 136 | YES | 136 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/16/20 16:50 | 12/16/20 19:40 | 170 | YES | 170 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/16/20 20:17 | 12/16/20 21:15 | 58 | YES | 58 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/18/20 5:20 | 12/18/20 6:30 | 70 | YES | 70 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/18/20 6:30 | 12/18/20 14:30 | 480 | YES | 480 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/18/20 14:30 | 12/18/20 22:30 | 480 | YES | 480 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/18/20 22:30 | 12/19/20 6:30 | 480 | YES | 480 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/19/20 6:30 | 12/19/20 14:30 | 480 | YES | 480 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/19/20 14:30 | 12/19/20 17:53 | 203 | YES | 203 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/20/20 16:25 | 12/20/20 17:17 | 52 | YES | 52 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/20/20 19:45 | 12/20/20 20:53 | 68 | YES | 68 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/22/20 12:12 | 12/22/20 13:48 | 95 | YES | 95 | Bypass necessary to protect plant equipment. | N/A |

**5) Monitor Bypasses:** Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system *See Minn. R. 7017.1110 subp. 2c*

| 5a) | 5b) | 5c) | 5d) | 5e) | 5f) | 5g) | 5h) | 5i) | 5j) |
|---|---|---|---|---|---|---|---|---|---|
| Monitor ID number | Emission Unit Required to be Monitored | Pollutant and Limit Required to be Monitored | Beginning Date and Time of Bypass Period | End date and time of bypass period | Duration of monitor bypass (minutes) | Was P.C.E. operating during bypass period? | Duration of allowable monitor bypass | Reason for monitor bypass (clarifying comments) | Corrective action taken (clarifying comments) |
| Line 6 | SV144 | NOx/SO2 | 12/22/20 14:18 | 12/22/20 14:30 | 12 | YES | 12 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/22/20 14:30 | 12/22/20 14:39 | 9 | YES | 9 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/29/20 9:33 | 12/29/20 9:46 | 13 | YES | 13 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/29/20 15:12 | 12/29/20 15:30 | 18 | YES | 18 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/29/20 16:57 | 12/29/20 17:19 | 22 | YES | 22 | Bypass necessary to protect plant equipment. | N/A |
| Line 6 | SV144 | NOx/SO2 | 12/29/20 16:57 | 12/29/20 17:19 | 22 | YES | 22 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 10/10/20 9:09 | 10/10/20 9:35 | 26 | YES | 26 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 10/13/20 22:30 | 10/13/20 22:59 | 29 | YES | 29 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 10/14/20 10:59 | 10/14/20 22:30 | 691 | YES | 691 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 10/14/20 22:30 | 10/14/20 22:56 | 26 | YES | 26 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 11/4/20 5:03 | 11/4/20 6:23 | 80 | YES | 80 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 11/6/20 15:20 | 11/6/20 15:38 | 18 | YES | 18 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 11/9/20 8:26 | 11/9/20 8:59 | 34 | YES | 34 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 11/9/20 23:37 | 11/10/20 0:23 | 46 | YES | 46 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 11/12/20 15:50 | 11/12/20 16:14 | 25 | YES | 25 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 11/14/20 1:00 | 11/14/20 3:08 | 128 | YES | 128 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 11/15/20 6:15 | 11/15/20 6:30 | 15 | YES | 15 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 11/15/20 6:30 | 11/15/20 6:33 | 3 | YES | 3 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 11/16/20 12:07 | 11/16/20 12:21 | 14 | YES | 14 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 11/16/20 12:57 | 11/16/20 13:38 | 41 | YES | 41 | Bypass necessary to protect plant equipment. | N/A |

**5) Monitor Bypasses:** Provide the following information for each period in which an emission unit is operating but is not being monitored because emissions were either partially or totally diverted around the monitoring system *See Minn. R. 7017.1110 subp. 2c*

| 5a) | 5b) | 5c) | 5d) | 5e) | 5f) | 5g) | 5h) | 5i) | 5j) |
|---|---|---|---|---|---|---|---|---|---|
| Monitor ID number | Emission Unit Required to be Monitored | Pollutant and Limit Required to be Monitored | Beginning Date and Time of Bypass Period | End date and time of bypass period | Duration of monitor bypass (minutes) | Was P.C.E. operating during bypass period? | Duration of allowable monitor bypass | Reason for monitor bypass (clarifying comments) | Corrective action taken (clarifying comments) |
| Line 7 | SV151 | NOx/SO2 | 11/16/20 18:58 | 11/16/20 20:14 | 76 | YES | 76 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 11/17/20 9:07 | 11/17/20 9:50 | 43 | YES | 43 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 11/28/20 18:15 | 11/28/20 18:34 | 20 | YES | 20 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 11/29/20 22:30 | 11/29/20 22:59 | 29 | YES | 29 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 11/30/20 18:59 | 12/1/20 6:30 | 691 | YES | 691 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 12/1/20 6:30 | 12/1/20 14:30 | 480 | YES | 480 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 12/1/20 14:30 | 12/1/20 16:43 | 133 | YES | 133 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 12/10/20 5:59 | 12/10/20 6:30 | 31 | YES | 31 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 12/10/20 14:30 | 12/10/20 20:54 | 384 | YES | 384 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 12/12/20 21:30 | 12/12/20 21:43 | 13 | YES | 13 | Bypass necessary to protect plant equipment. | N/A |
| Line 7 | SV151 | NOx/SO2 | 12/29/20 16:11 | 12/29/20 16:26 | 15 | YES | 15 | Bypass necessary to protect plant equipment. | N/A |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | **5k) Total duration of allowable monitor bypass:** | | | **513** | **hours** | |

## COMS audits

| Subject item | Operating hours | Monitor ID | Pollutant | Last audit date | Cal error results | Pass/fail | Next test due by: | Comments |
|---|---|---|---|---|---|---|---|---|
| N/A | | | | | | | | |

## Cylinder gas audit's (CGA)

| Emission unit | Operating hours | Monitor ID | Pollutant | Last audit date | Cal error results | Pass/fail | Next test due by: | Comments |
|---|---|---|---|---|---|---|---|---|
| SV103 | 2179 | MR001 | NOx | 11/3/2020 | Low 2.27%<br>Mid 1.06% | Pass | 3/31/2021 | |
| SV118 | 2110 | MR002 | NOx | 11/3/2020 | Low 2.02%<br>Mid 1.01% | Pass | 3/31/2021 | |
| SV127 | 2195 | MR003 | NOx | 11/3/2020 | Low 1.37%<br>Mid 0.87% | Pass | 3/31/2021 | |
| SV144 | 2174 | MR004 | NOx | 11/4/2020 | Low 2.32%<br>Mid 0.38% | Pass | 3/31/2021 | |
| SV151 | 2176 | MR005 | NOx | 11/4/2020 | Low 2.80%<br>Mid 1.11% | Pass | 3/31/2021 | |
| SV103 | 2179 | MR001 | SO2 | 11/3/2020 | Low 1.18%<br>Mid 3.01% | Pass | 3/31/2021 | |
| SV118 | 2110 | MR002 | SO2 | 11/3/2020 | Low 1.18%<br>Mid 1.99% | Pass | 3/31/2021 | |
| SV127 | 2195 | MR003 | SO2 | 11/3/2020 | Low 3.01%<br>Mid 4.52% | Pass | 3/31/2021 | |
| SV144 | 2174 | MR004 | SO2 | 11/4/2020 | Low 0.39%<br>Mid 0.74% | Pass | 3/31/2021 | |
| SV151 | 2176 | MR005 | SO2 | 11/4/2020 | Low 3.27%<br>Mid 0.18% | Pass | 3/31/2021 | |
| | | | | | | | | |

## Linearity

| Emission unit | Operating hours | Monitor ID | Pollutant | Last audit date | Cal error results | Pass/fail | Next test due by: | Comments |
|---|---|---|---|---|---|---|---|---|
| N/A | | | | | Low<br>Mid<br>High | | | |

## Relative accuracy test audit (RATA)

| Emission unit | Operating hours | Monitor ID | Pollutant | Last audit date | Relative accuracy | Pass/fail | Next test due by: | Comments |
|---|---|---|---|---|---|---|---|---|
| SV103 | | MR001 | SO2 | 5/21/2020 | 5.0% | Pass | 2nd Qtr 2021 | |
| SV103 | | MR001 | NOx | 5/21/2020 | 8.9% | Pass | 2nd Qtr 2021 | |
| SV118 | | MR002 | SO2 | 5/20/2020 | 6.2% | Pass | 2nd Qtr 2021 | |
| SV118 | | MR002 | NOx | 5/20/2020 | 1.0% | Pass | 2nd Qtr 2021 | |
| SV127 | | MR003 | SO2 | 5/22/2020 | 3.1% | Pass | 2nd Qtr 2021 | |
| SV127 | | MR003 | NOx | 5/22/2020 | 11.5% | Pass | 2nd Qtr 2021 | |
| SV144 | 1798 | MR004 | SO2 | 8/19/2020 | 11.3% | Pass | 2nd Qtr 2021 | RATA was completed in 3rd Qtr upon restart of operations after idle. |
| SV144 | 1798 | MR004 | NOx | 8/19/2020 | 10.4% | Pass | 2nd Qtr 2021 | RATA was completed in 3rd Qtr upon restart of operations after idle. |
| SV151 | 1773 | MR005 | SO2 | 8/20/2020 | 5.2% | Pass | 2nd Qtr 2021 | RATA was completed in 3rd Qtr upon restart of operations after idle. |
| SV151 | 1773 | MR005 | NOx | 8/20/2020 | 8.6% | Pass | 2nd Qtr 2021 | RATA was completed in 3rd Qtr upon restart of operations after idle. |
| | | | | | | | | |

## 6) CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

| | |
|---|---|
| Signature of Responsible Official | Lukas Klemke<br>Printed Name of Responsible Official |
| Plant Manager - Minnesota Ore<br>Title | January 27, 2021<br>Date |

## Summary Table by Monitor Downtime Type
## U. S. Steel - Minntac
## 4th Quarter 2020

**NOx**

| Line | Duration (Hrs) | Description |
|---|---|---|
| Line 3 | 5 | Automatic Calibration |
| | 0 | Data Handling System Malfunction |
| | 0 | Excess Drift Ancillary Analyzer |
| | 0 | Excess Drift Primary Analyzer |
| | 8 | Primary Analyzer Malfunction |
| | 0 | Preventative Maintenance |
| | 1 | Sample Interface Malfunction |
| Line 4 | 8 | Automatic Calibration |
| | 0 | Data Handling System Malfunction |
| | 0 | Excess Drift Ancillary Analyzer |
| | 4 | Excess Drift Primary Analyzer |
| | 0 | Sample Interface Malfunction |
| | 4 | Primary Analyzer Malfunction |
| Line 5 | 2 | Automatic Calibration |
| | 0 | Data Handling System Malfunction |
| | 0 | Secondary Analyzer Malfunction |
| | 0 | Excess Drift Primary Analyzer |
| | 4 | Sample Interface Malfunction |
| | 0 | Primary Analyzer Malfunction |
| Line 6 | 6 | Automatic Calibration |
| | 0 | Data Handling System Malfunction |
| | 0 | Secondary Analyzer Malfunction |
| | 25 | Excess Drift Primary Analyzer |
| | 7 | Primary Analyzer Malfunction |
| | 0 | Sample Interface Malfunction |
| Line 7 | 16 | Automatic Calibration |
| | 0 | Data Handling System Malfunction |
| | 0 | Secondary Analyzer Malfunction |
| | 3 | Excess Drift Primary Analyzer |
| | 35 | Primary Analyzer Malfunction |
| | 0 | Sample Interface Malfunction |
| | 0 | Preventative Maintenance |

**SO2**

| Line | Duration (Hrs) | Description |
|---|---|---|
| Line 3 | 10 | Automatic Calibration |
| | 0 | Data Handling System Malfunction |
| | 0 | Excess Drift Ancillary Analyzer |
| | 18 | Excess Drift Primary Analyzer |
| | 1 | Sample Interface Malfunction |
| | 0 | Preventative Maintenance |
| | 7 | Primary Analyzer Malfunction |
| Line 4 | 8 | Automatic Calibration |
| | 0 | Data Handling System Malfunction |
| | 0 | Excess Drift Ancillary Analyzer |
| | 4 | Excess Drift Primary Analyzer |
| | 5 | Primary Analyzer Malfunction |
| | 0 | Sample Interface Malfunction |
| | 0 | Preventative Maintenance |
| Line 5 | 2 | Automatic Calibration |
| | 0 | Data Handling System Malfunction |
| | 0 | Secondary Analyzer Malfunction |
| | 0 | Excess Drift Primary Analyzer |
| | 2 | Sample Interface Malfunction |
| | 0 | Primary Analyzer Malfunction |
| | 0 | Preventative Maintenance |
| Line 6 | 7 | Automatic Calibration |
| | 0 | Sample Interface Malfunction |
| | 0 | Secondary Analyzer Malfunction |
| | 1 | Excess Drift Primary Analyzer |
| | 26 | Primary Analyzer Malfunction |
| | 0 | Sample Interface Malfunction |
| Line 7 | 13 | Automatic Calibration |
| | 0 | Data Handling System Malfunction |
| | 0 | Secondary Analyzer Malfunction |
| | 1 | Excess Drift Primary Analyzer |
| | 32 | Primary Analyzer Malfunction |
| | 0 | Sample Interface Malfunction |